

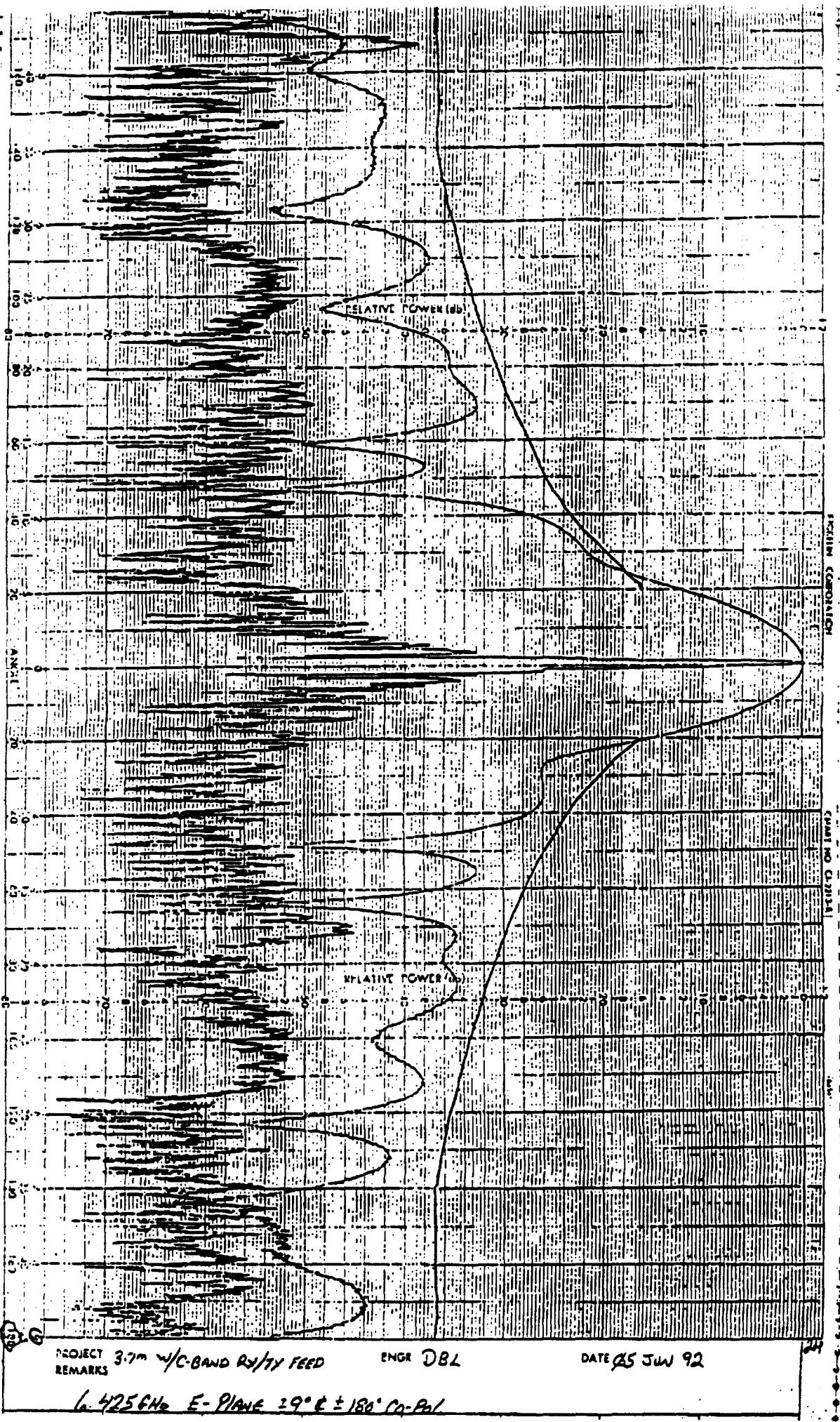
PROJECT 3.7m W/F-BAND RX/TX FEED

REMARKS

ENGR DBL

DATE 4-5 JUN 92

1.425 GHz E-Plane I9° PA-PA18 Y-PA1

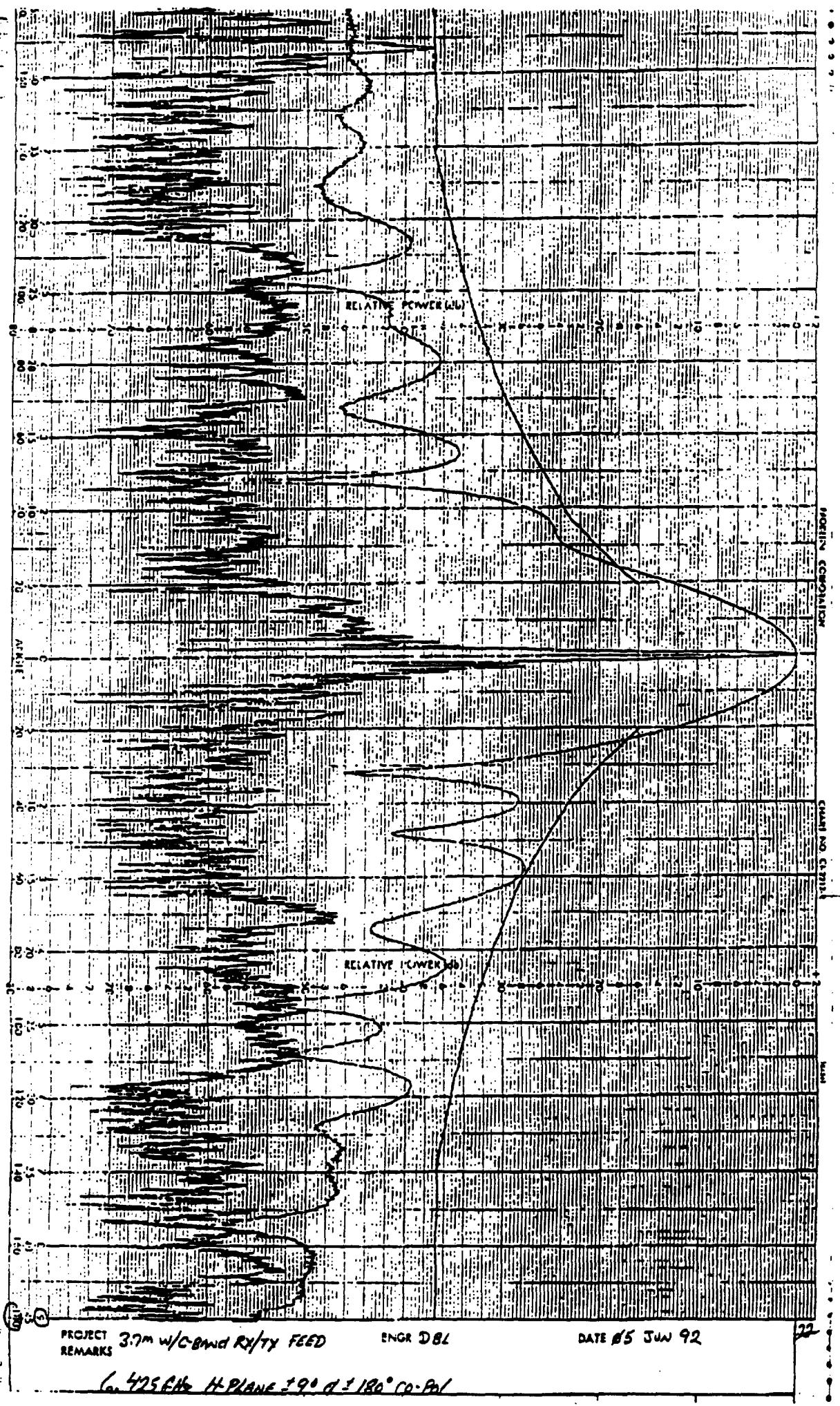


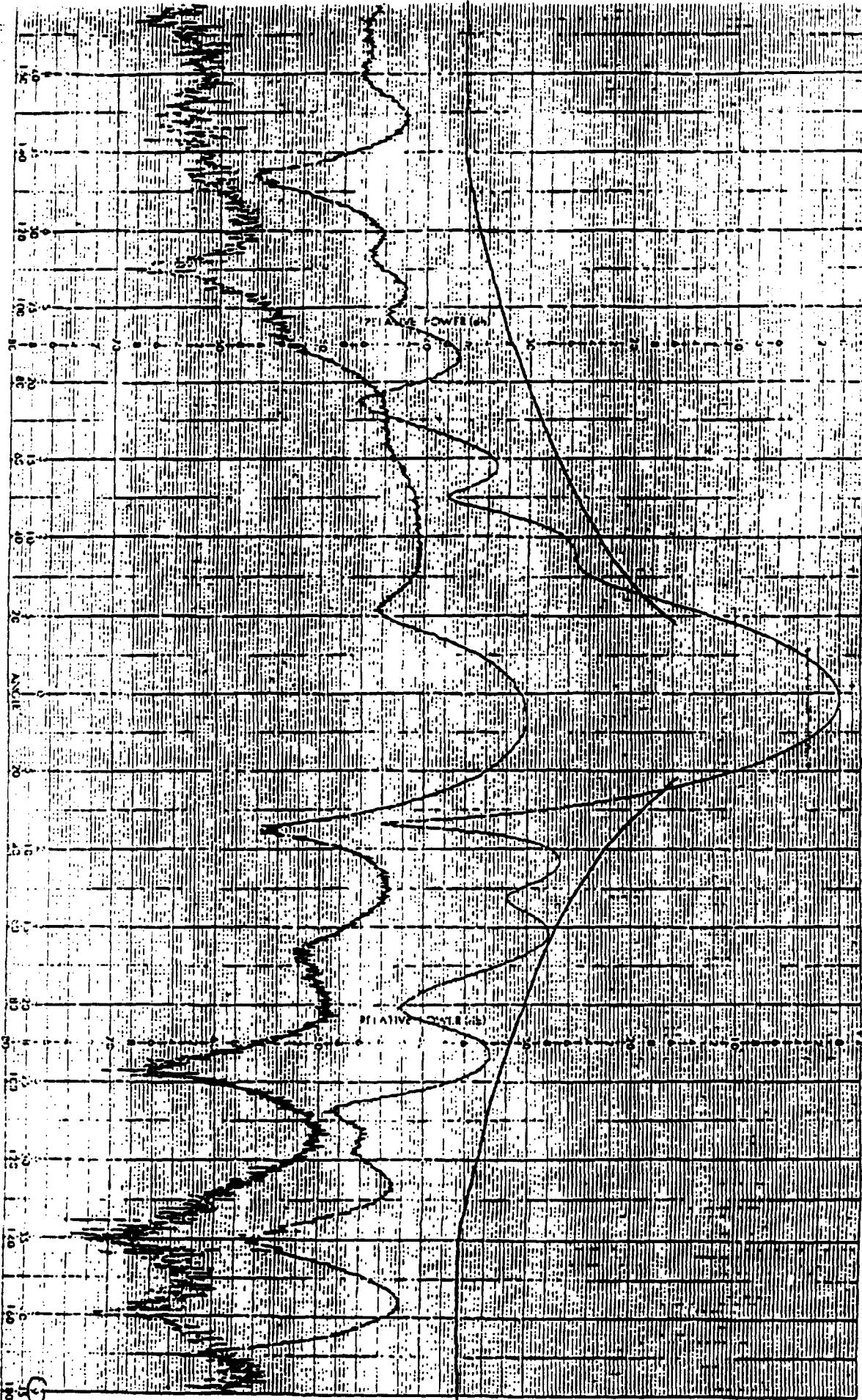
PROJECT
REMARKS 3.7m w/C-BAND R/F/TY FEED

ENGR DBL

DATE 25 JUN 92

6.425 GHz E-PLANE $\pm 180^\circ$ CP-POL



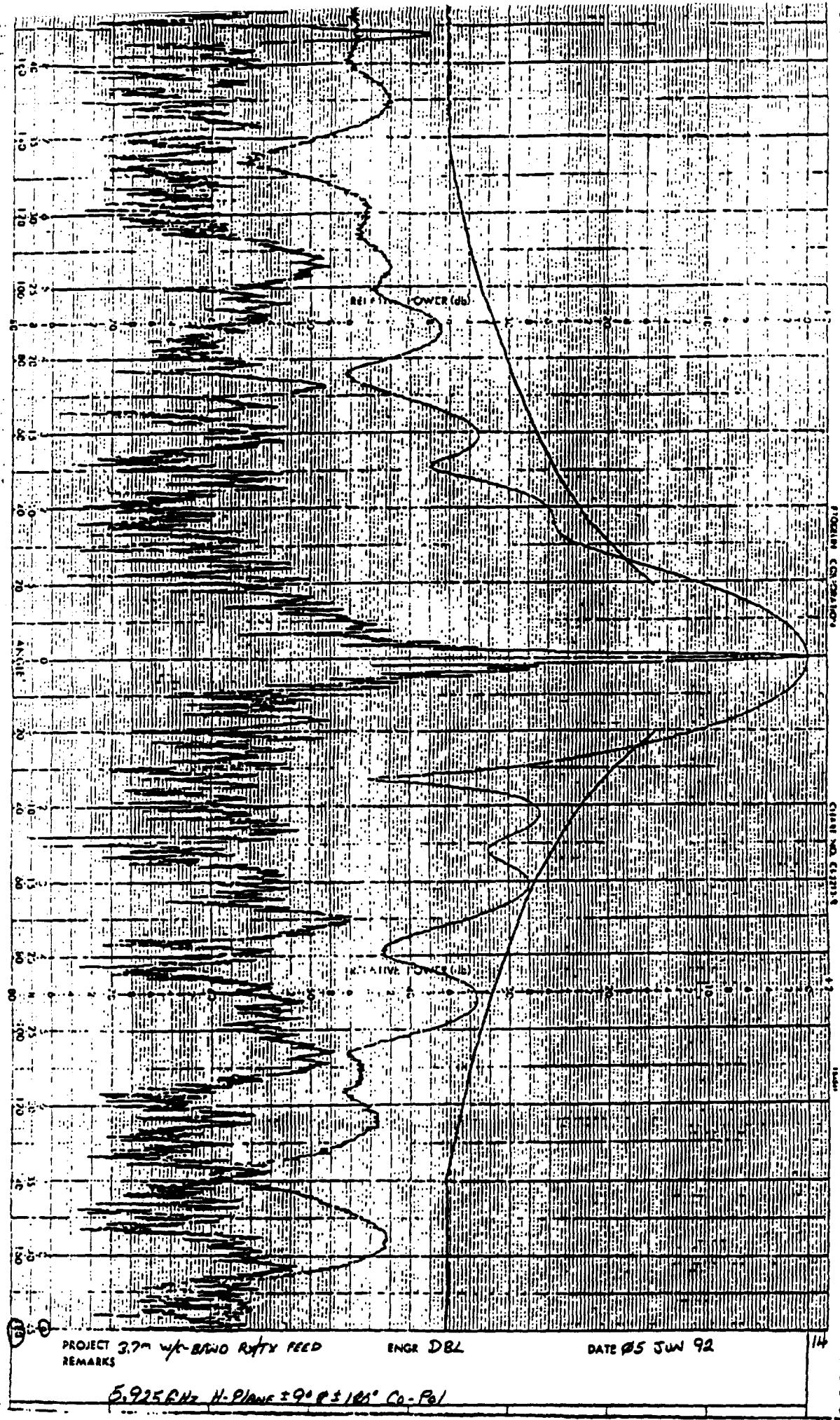


PROJECT 3.7m w/C-BAND RX/TY FEED
REMARKS

ENGR DBL

DATE 05 JUN 92

5.925GHz H-PLANE ± 9° Co-Pol/E-X-Pol



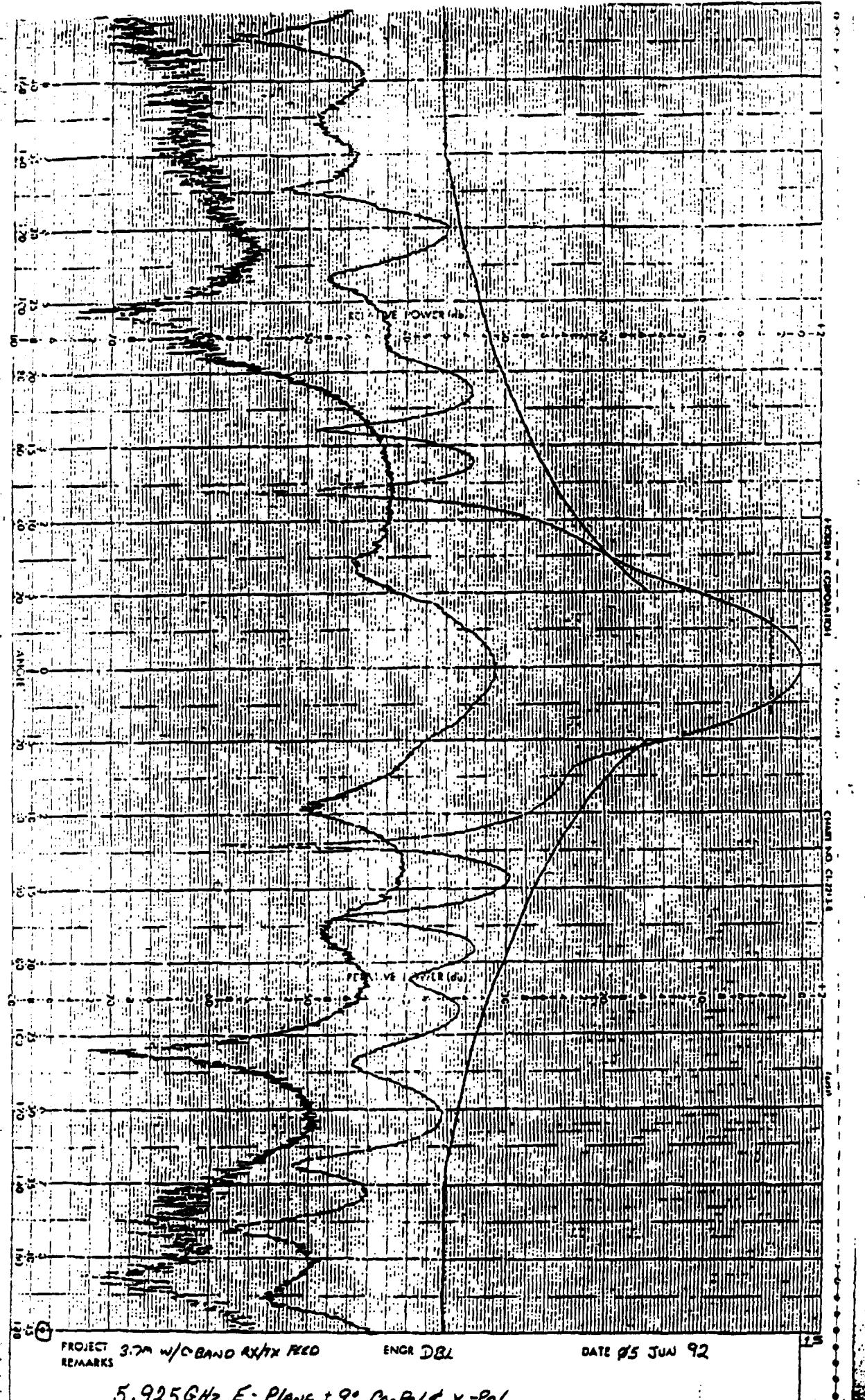
PROJECT 3.7M W/T-BWNO R/F/TY FEED
REMARKS

ENGR DBL

DATE 05 JUN 92

14

5.925GHz H-Plane $\pm 90^\circ \pm 10^\circ$ Co-Pol

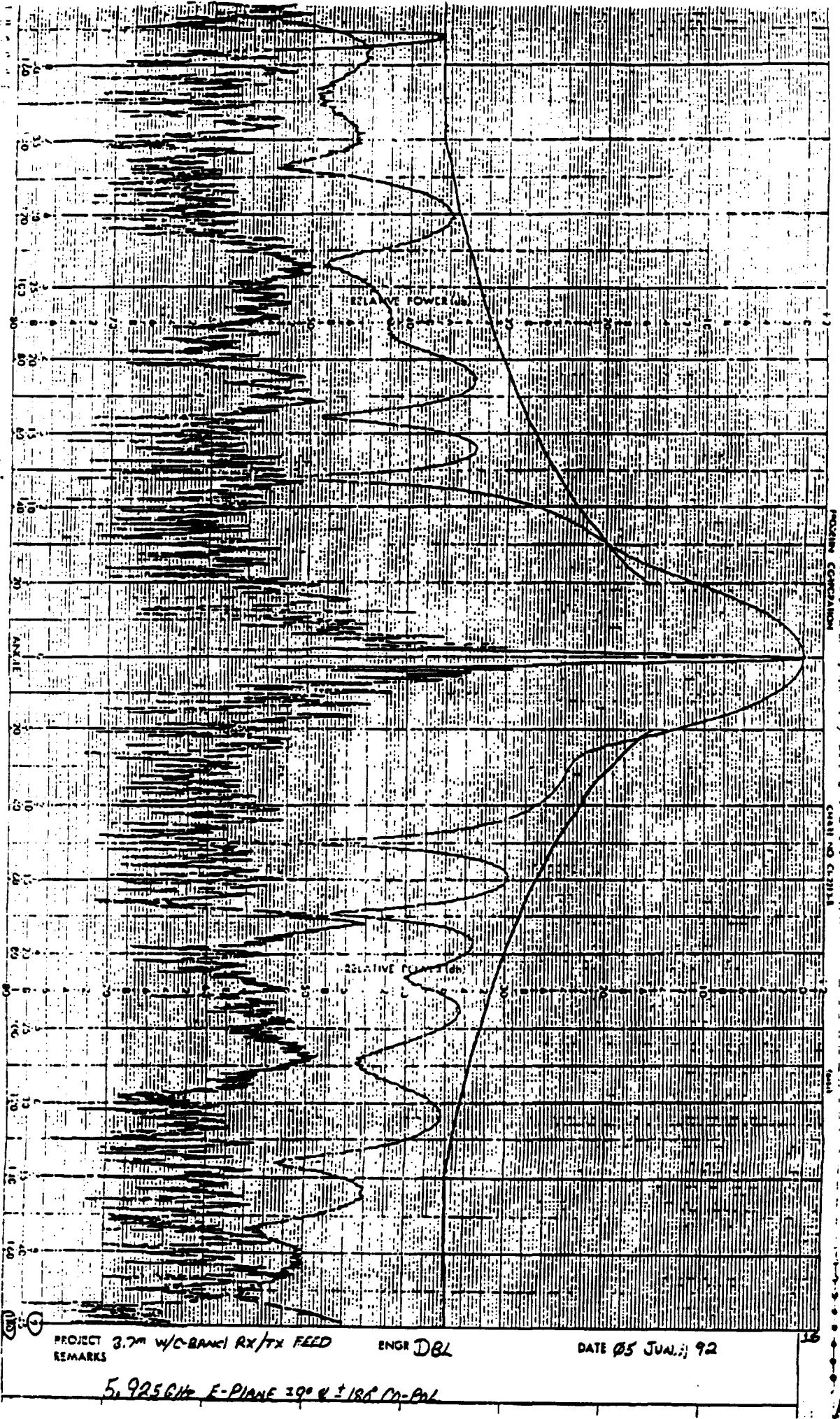


PROJECT 3.7M W/C BAND RX/TX FEED
REMARKS

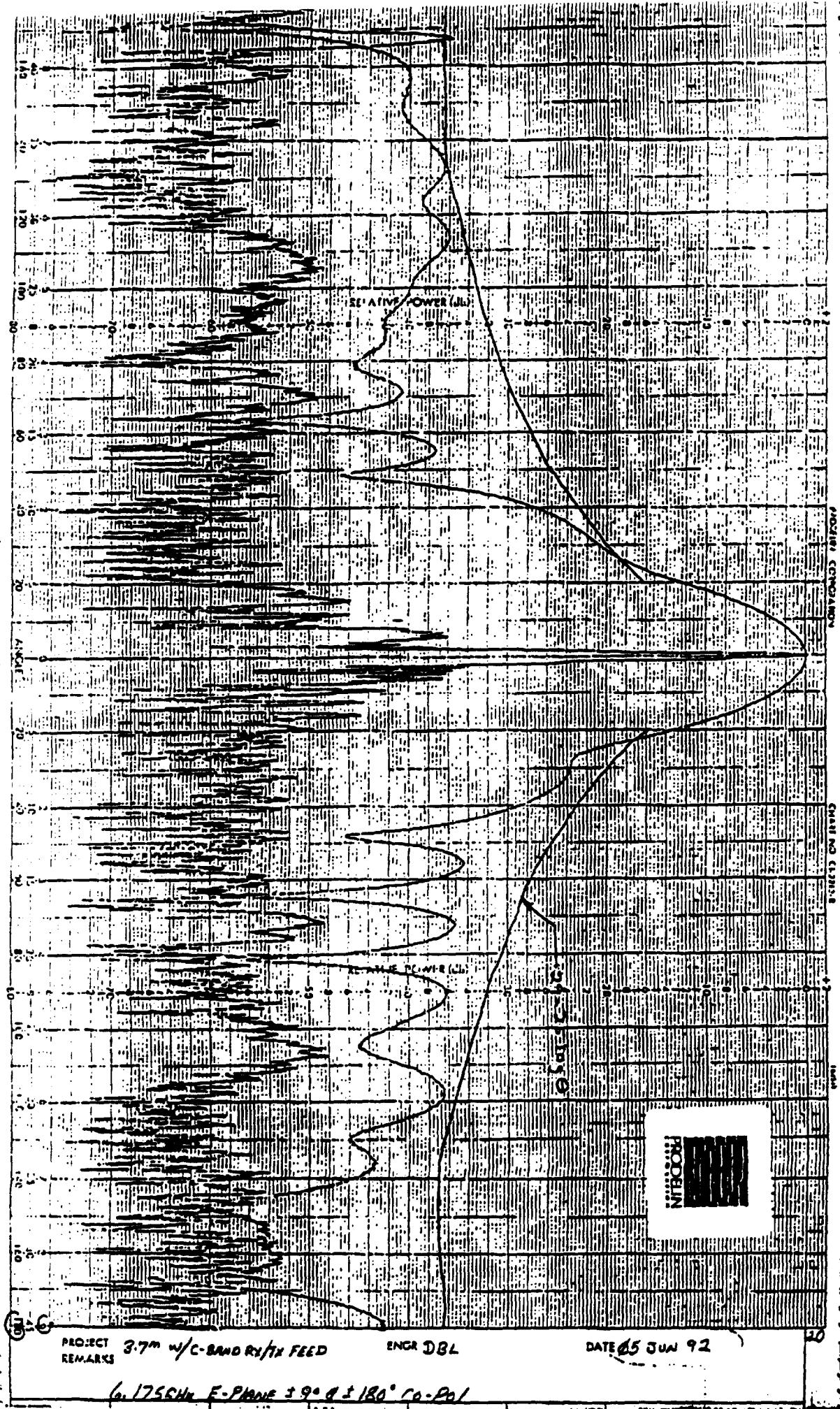
ENGR DBL

DATE 05 JUN 92

5.925GHz E-PLANE ± 9° Ph-Phd x-Ph1







09/01/99

16:53

LORALSKYNET + 918188849823

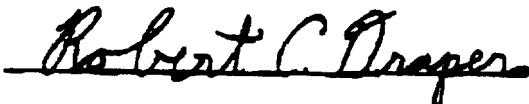
Engineering Certification of Loral Skynet®¹**September 1, 1999**

Federal Communications Commission - International Bureau
445 12th Street, S.W.
Washington, DC 20554

To Whom It May Concern:

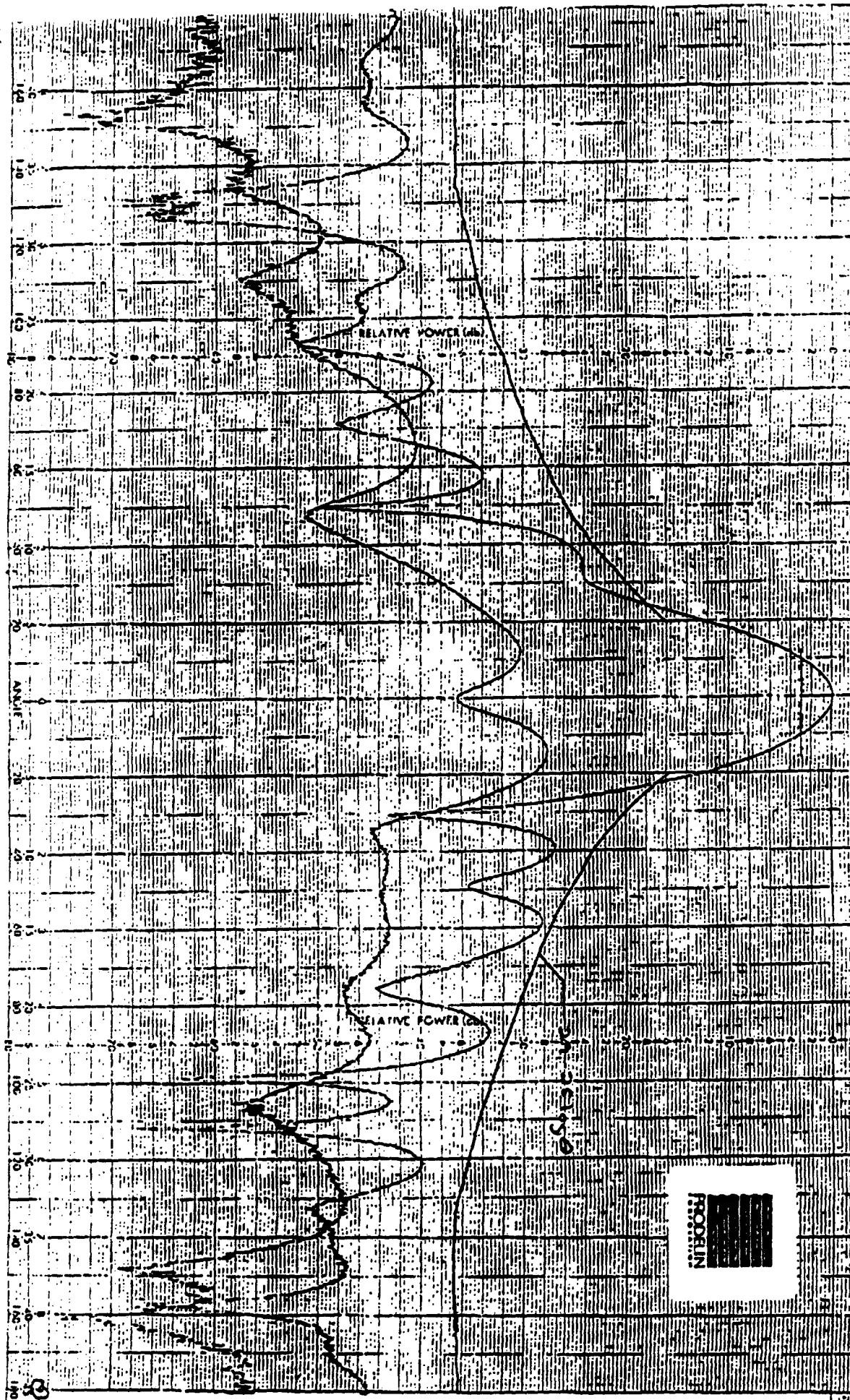
The undersigned of Loral Skynet certifies that, to the best of his knowledge, no U.S. domestic satellite is in orbit at less than two degrees from the Telstar 5 satellite, which is authorized to operate and is currently operating at 97 degrees WL in the geostationary earth orbit.

The undersigned further certifies that Loral Skynet is aware that Onsat Network Communications, Inc. is planning to communicate with the Telstar 5 satellite by means of earth stations using a 3.7 meter diameter C-band antenna (Prodetim model # 1374-370), and that the antenna will be operating at a maximum EIRP density of 27.5 dBW/4 kHz, which is equal to a maximum power density at the antenna input port of -17.6 dBW/4 kHz.

Sincerely,

Robert C. Draper - Principal Engineer
Satellite Services Engineering
Loral Skynet

¹ Skynet is a registered trademark of Loral SpaceCom Corporation.

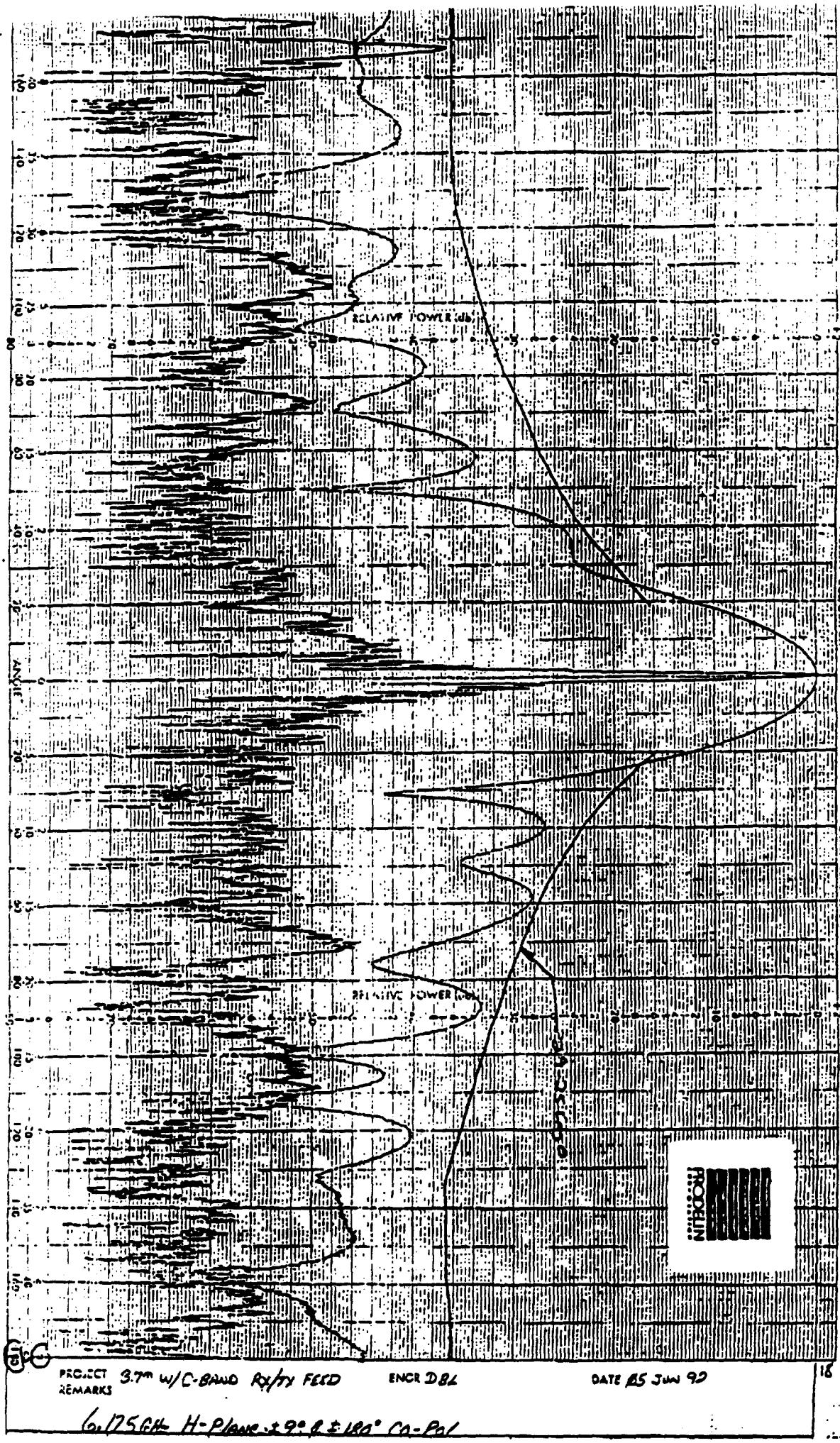


PROJECT 3.7A W/C-8W1 R/H X FEED
REMARKS

ENGI DBL

DATE 85 Jun 92

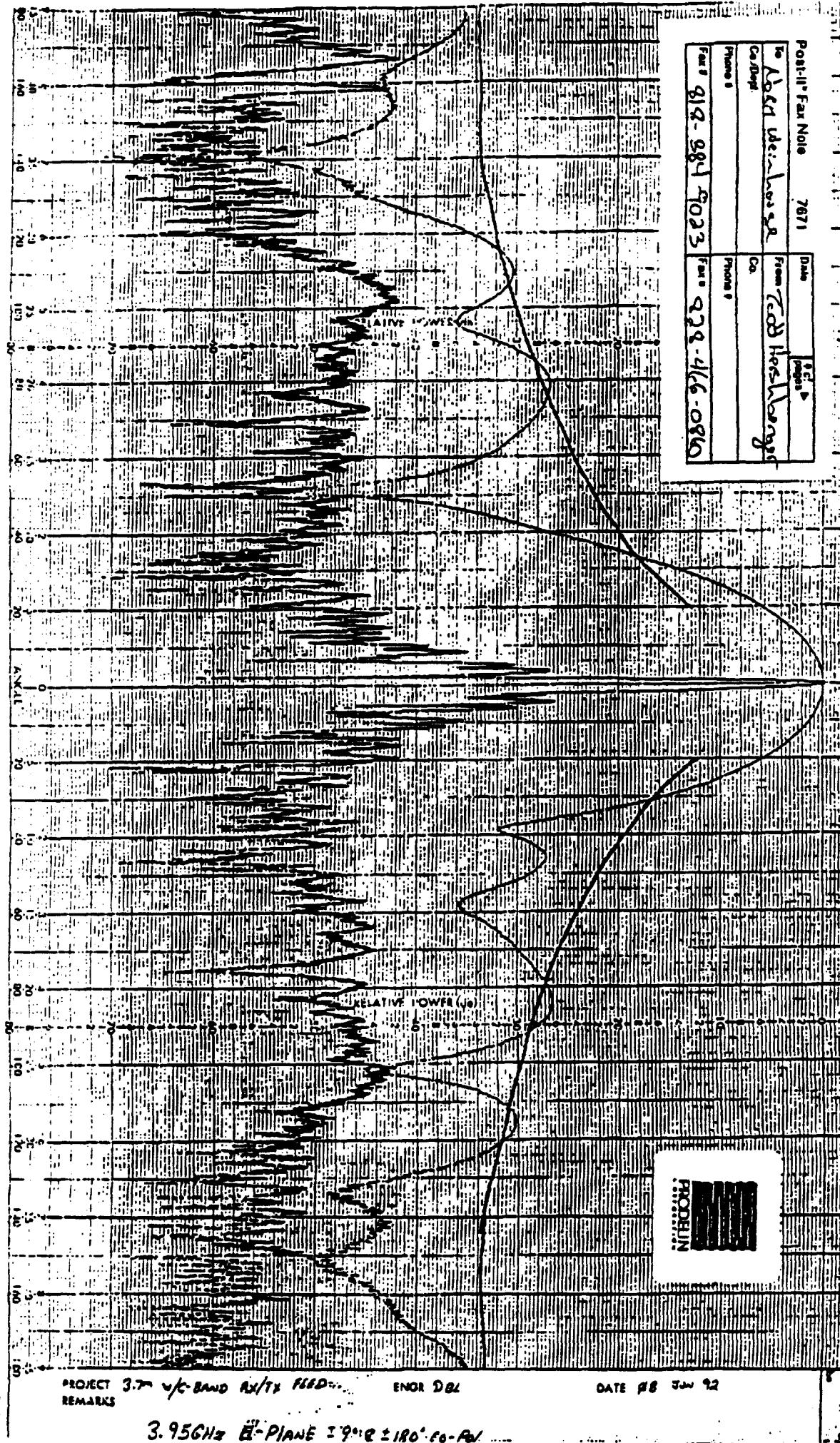
6.1756Hz H-Plane ± 9° CO-POL & X-POL

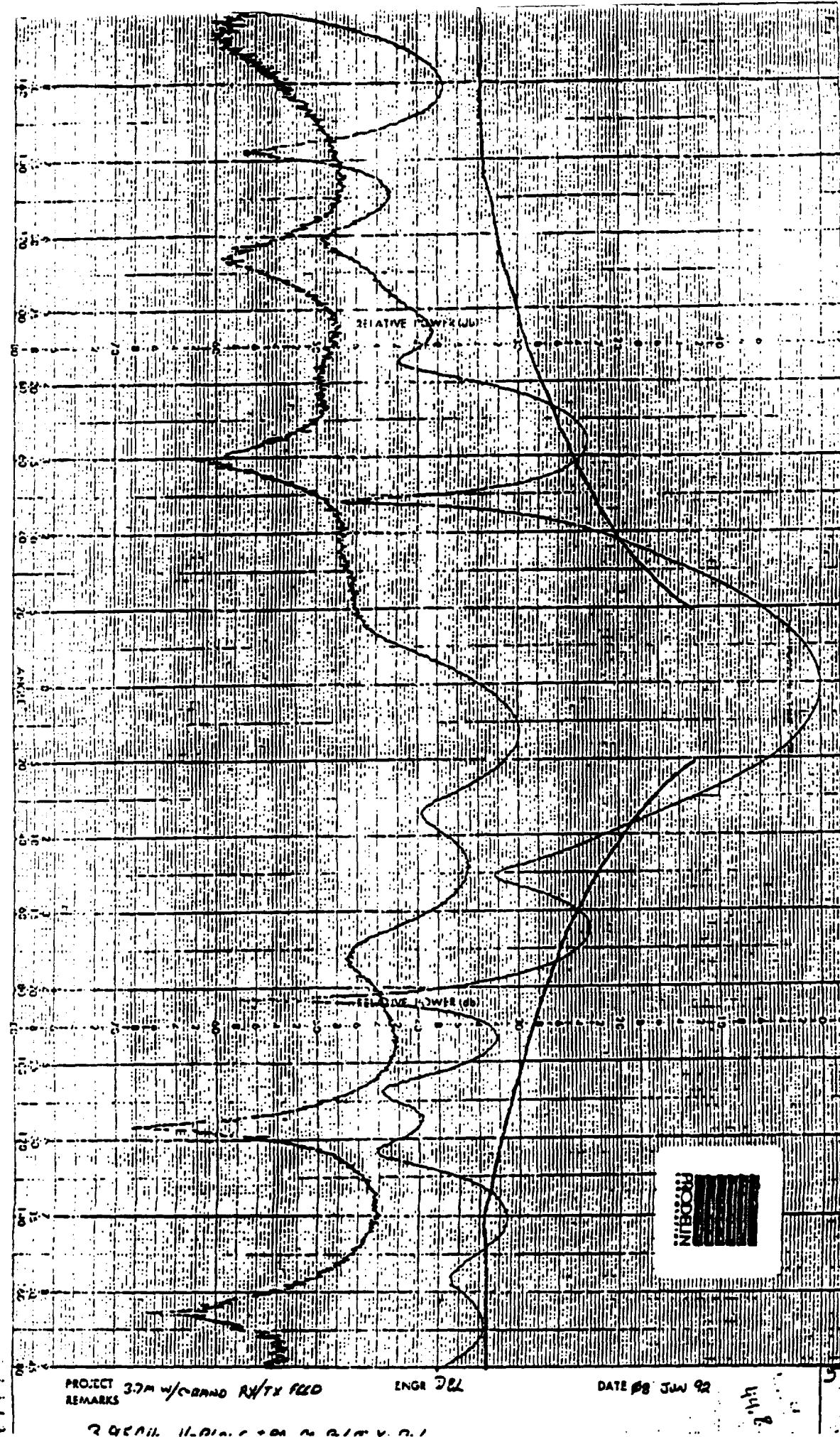


PROJECT 3.7m W/C-BAND Rx/Tx FEED
REMARKS

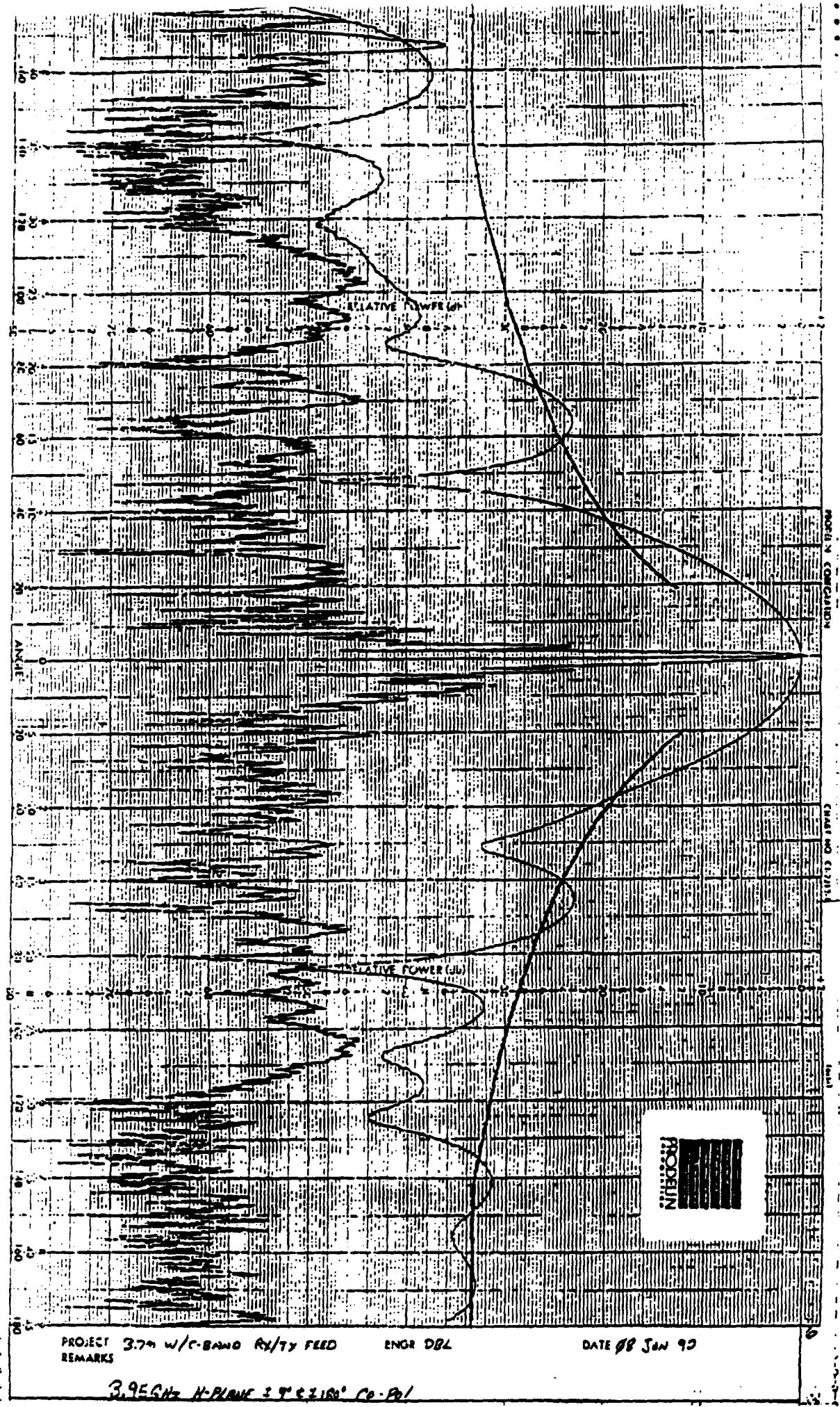
ENCR D84

DATE 25 Jun 92





2000ft 11,000ft 0m 21,000ft 0m



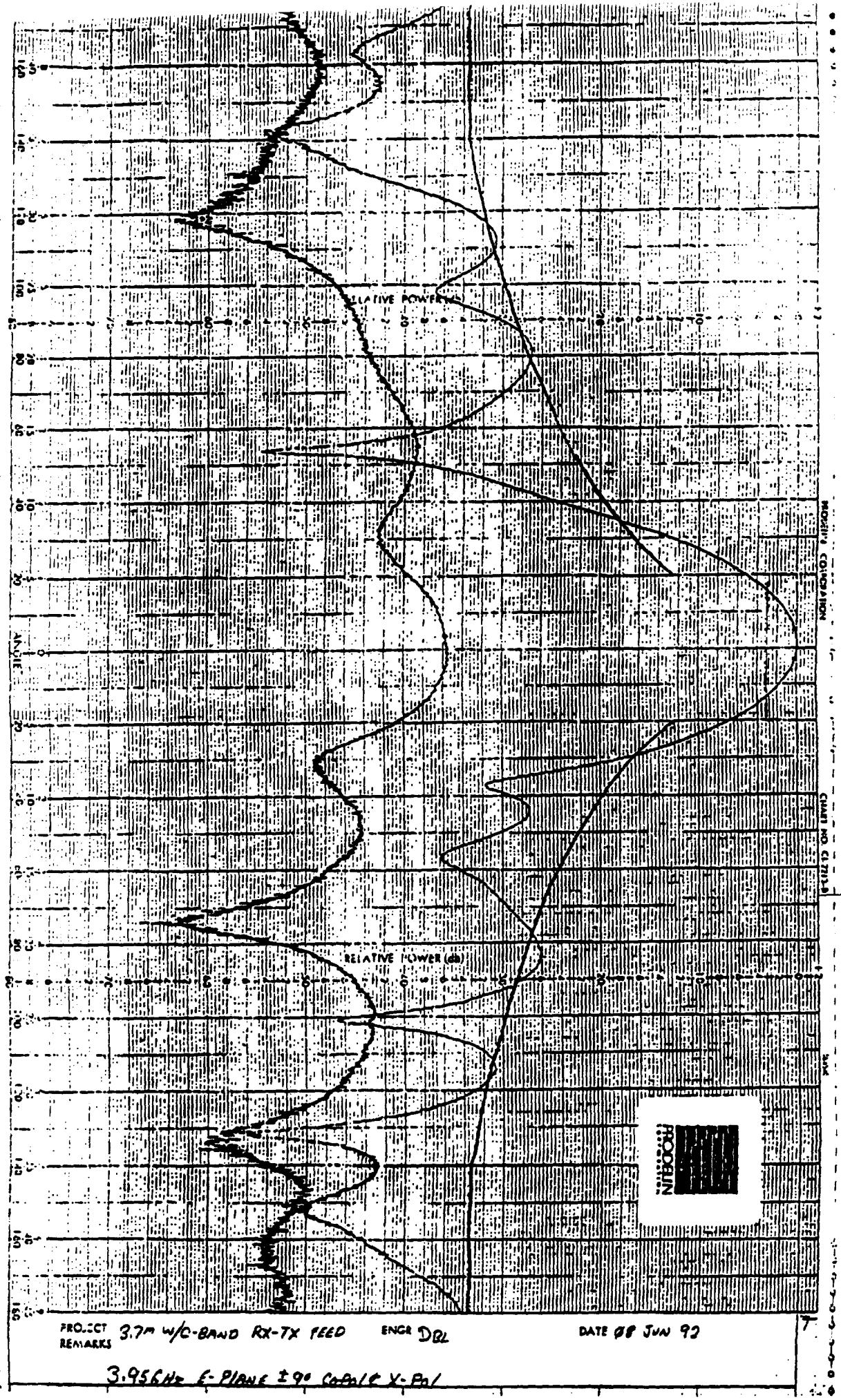
PROJECT 3.7m w/c-BAND RX/TX FEED

ENGR DBL

DATE 08 JAN 93

REMARKS

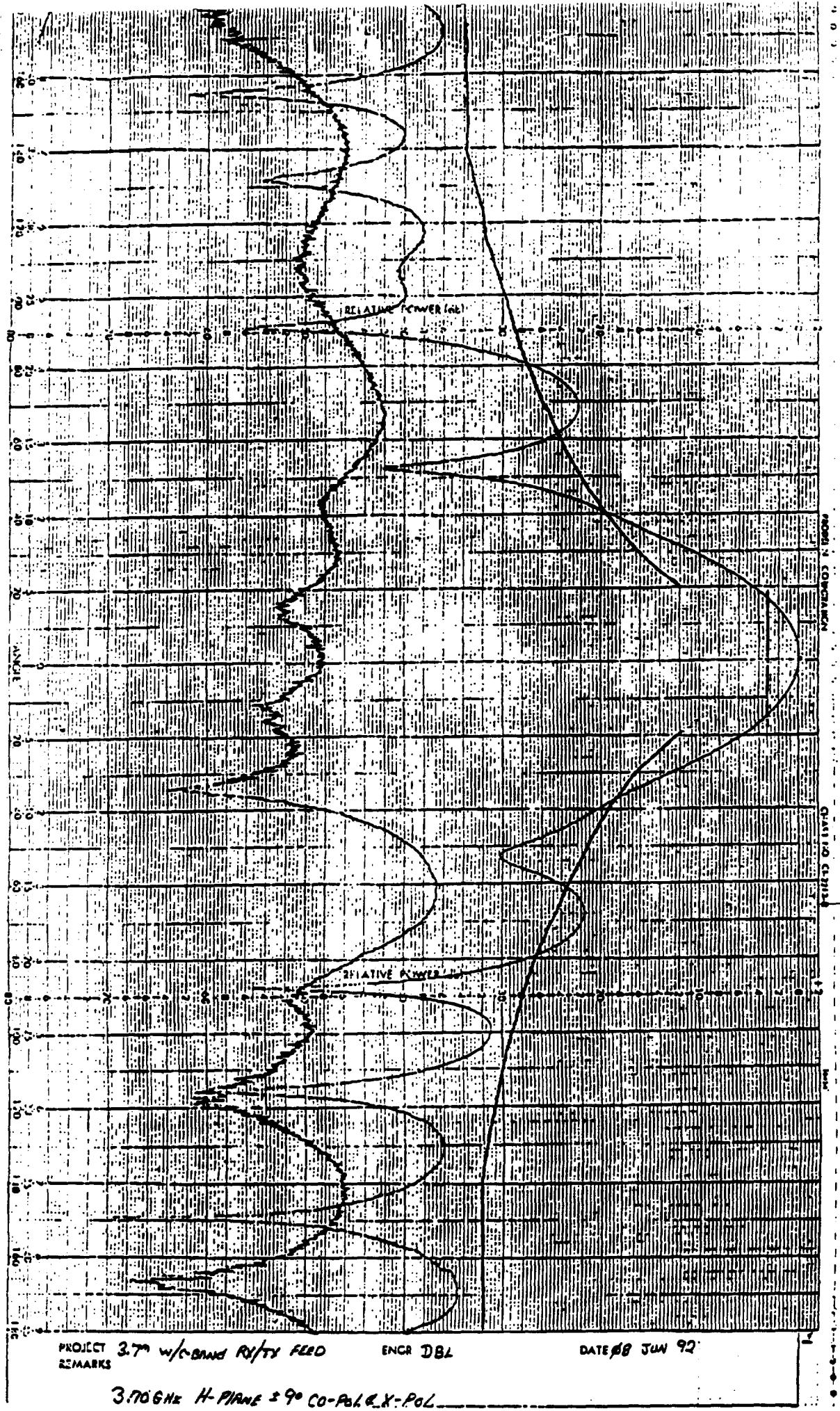
3.9GHz H-PLANE 3 T & 180° Co-Pol



PROJECT 3.7m w/C-BAND RX-TX FEED ENGR DBL
REMARKS

DATE 08 JUN 92

3.956Hz E-PLANE ±90 COAXIC X-POL

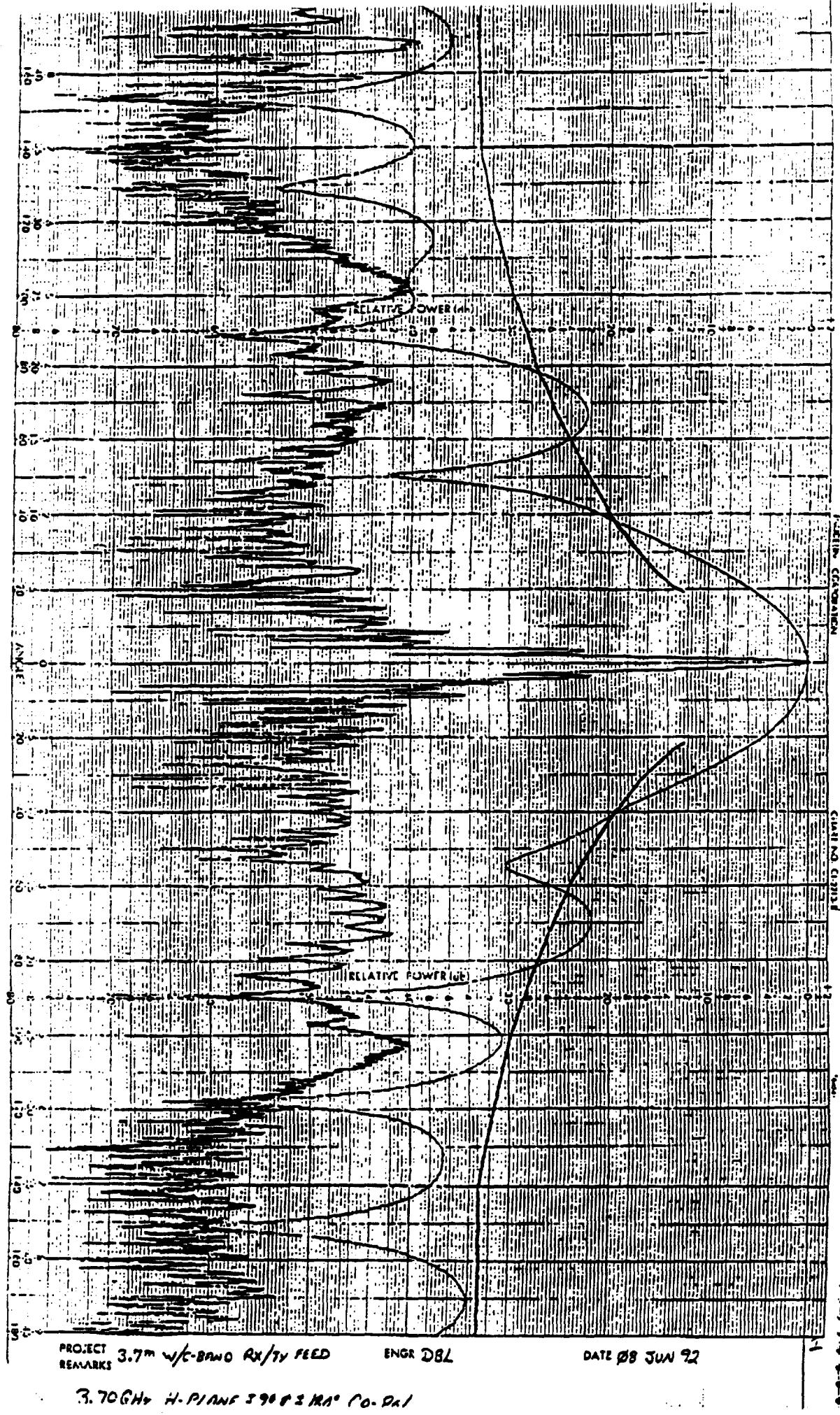


PROJECT 3.70 w/ CIRCULAR R/F/TY FEED
REMARKS

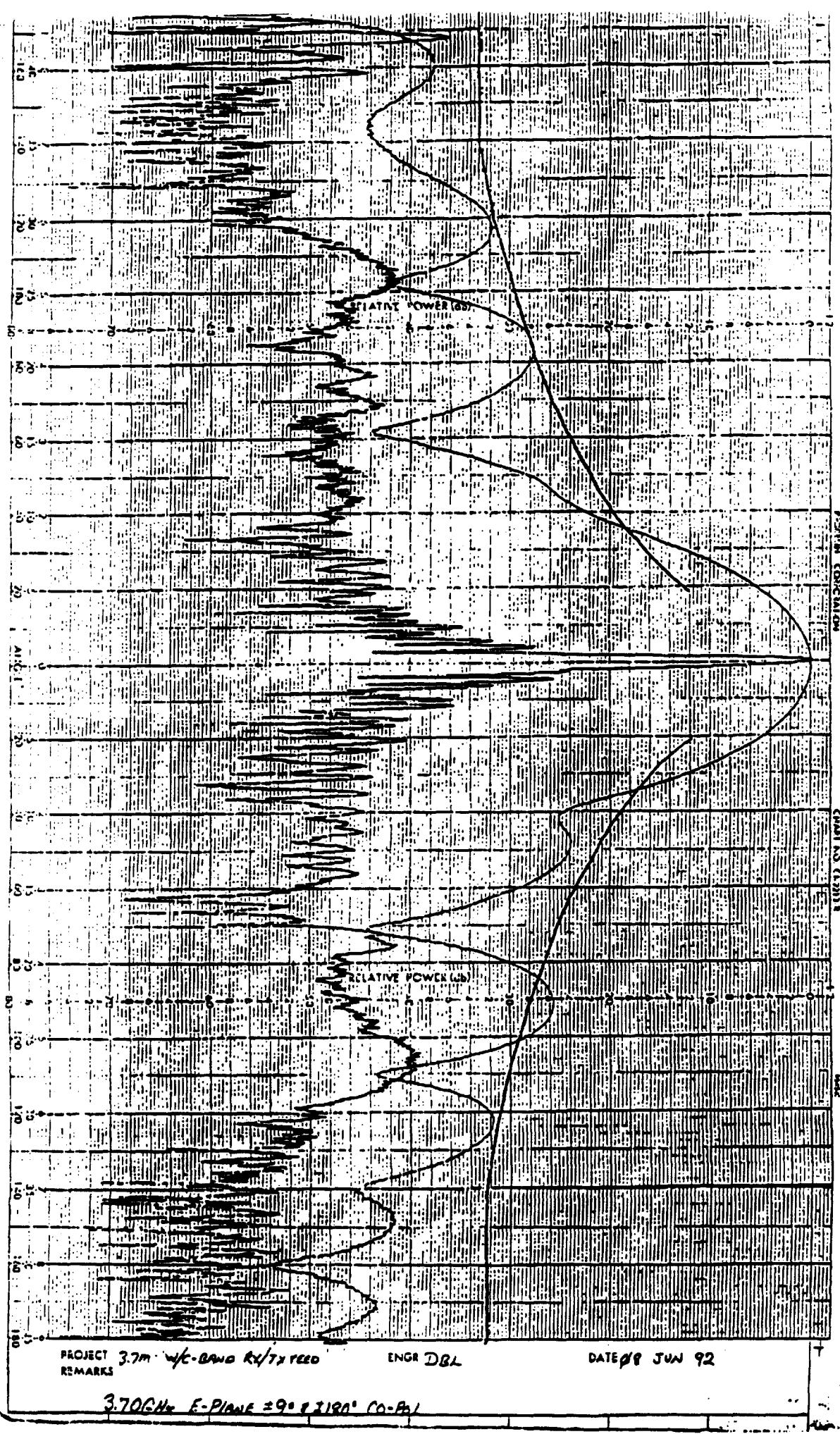
ENGR DBL

DATE 08 JUN 92

3.70 GHz H-PLANE ± 90° CO-POL & X-POL



3.70 GHz H-PLANE 390 ± 1 RA° PO-PAI

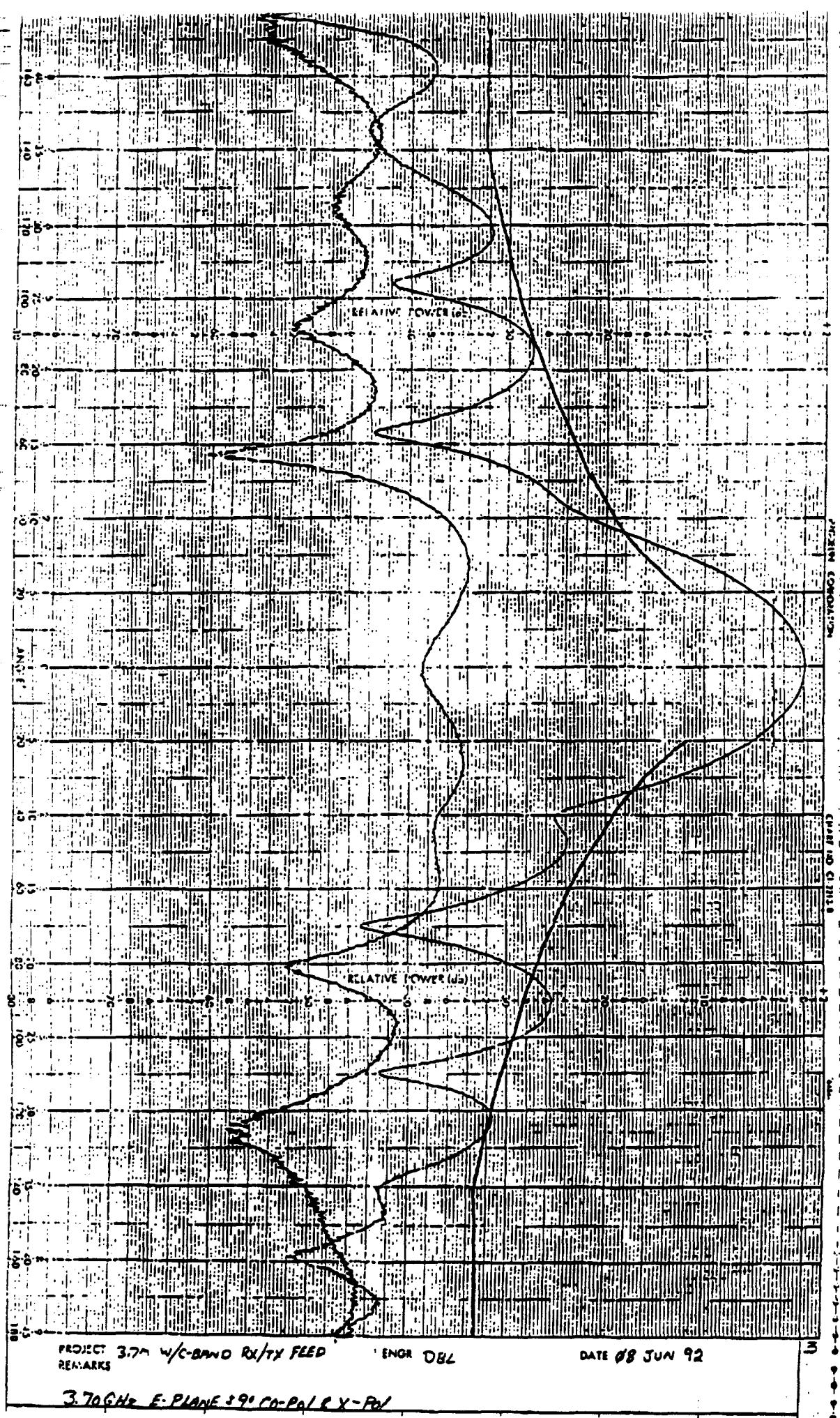


PROJECT 3.7m w/c-BAND KX/72 recd
REMARKS

ENGR DBA

DATE 29 JUN 92

3.70GHz E-Plane = 9° ± 318° CO-Poly

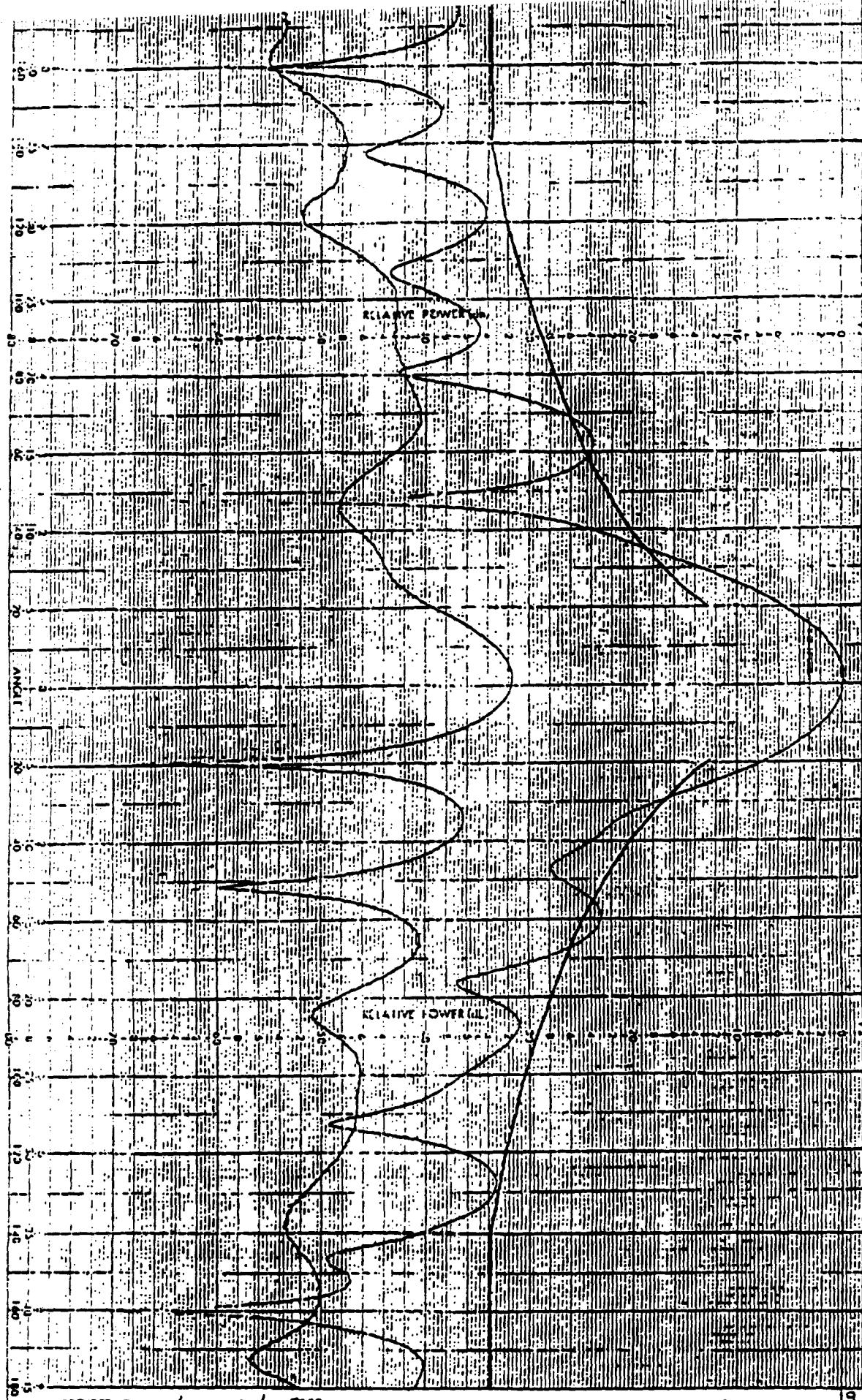


PROJECT: 3.7M W/C-BAND RX/TX FEED
REMARKS

ENGR DBL

DATE 08 JUN 92

3.70GHz E-PLANE 90° CO-PAI/C X-PAI

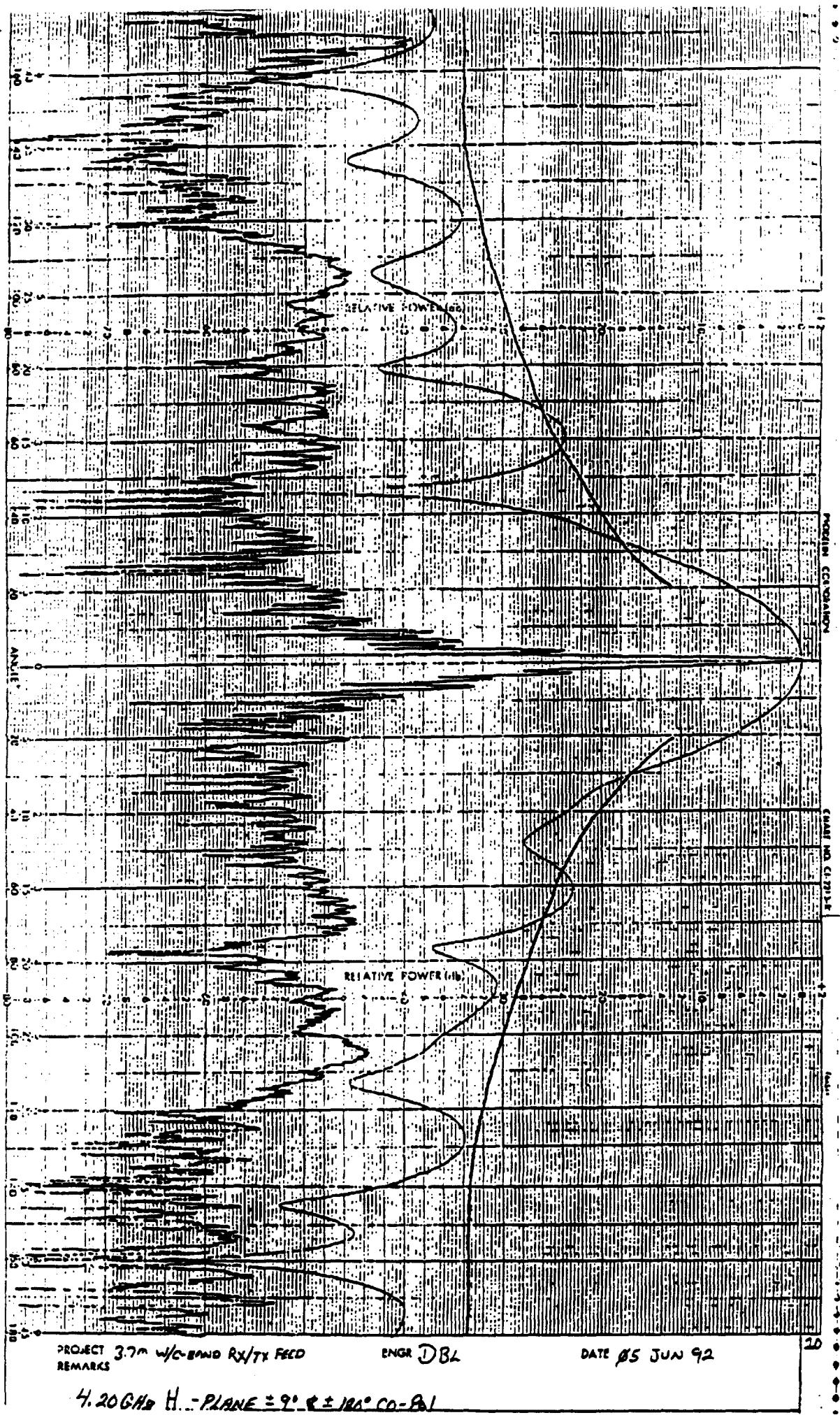


PROJECT 3.7m w/C-BAND RH/TX FEED
REMARKS

ENGR DBL

DATE 05 JUN 92

4.20GHz H-Plane ±9° In-Phase X-Plane



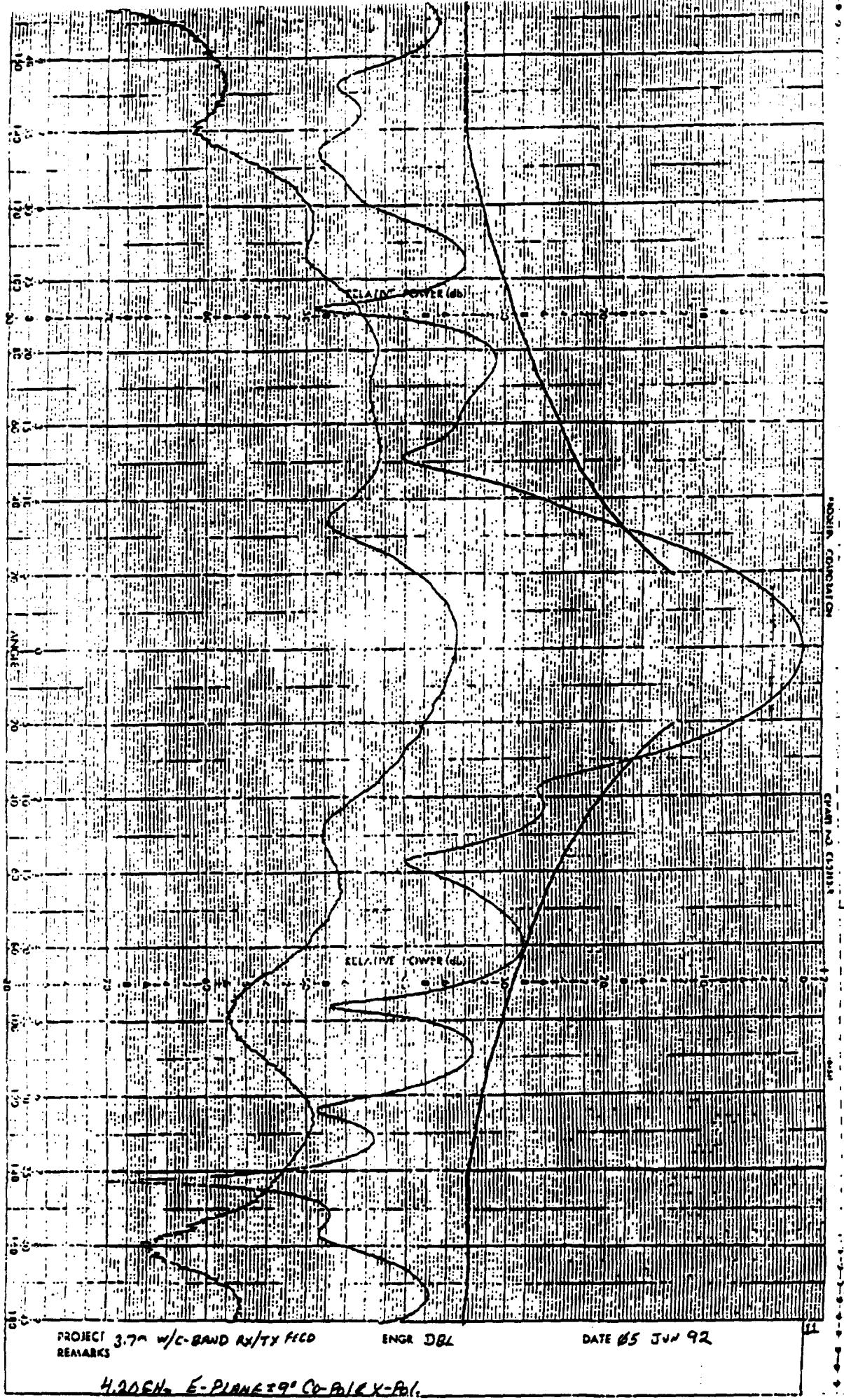
PROJECT 3.7m W/C-BAND RX/TX FEED

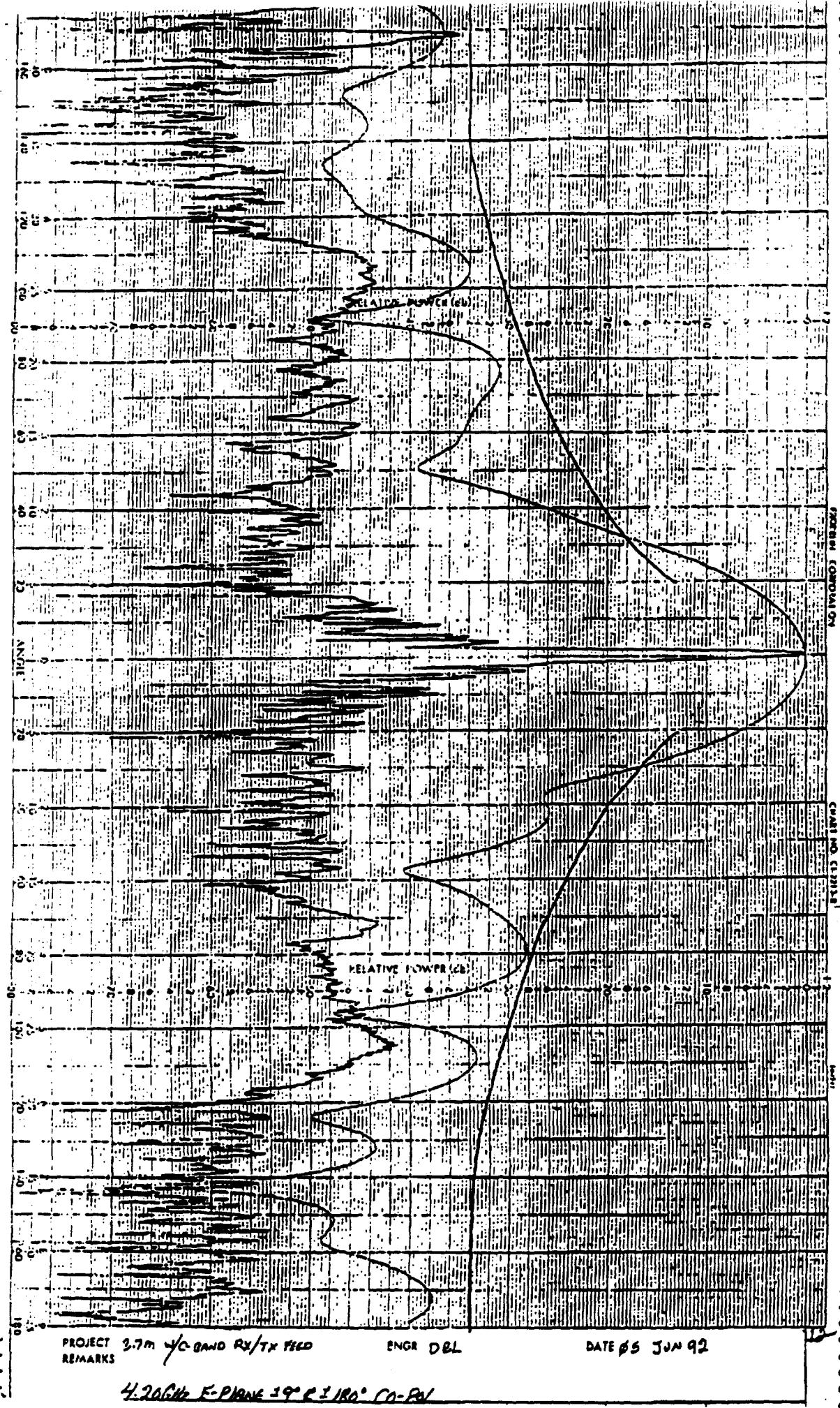
REMARKS

ENGR DBL

DATE 05 JUN 92

4.20 GHz H-PLANE = 9° R ± 10° CO-POL





PROJECT 3.7M YAGI BAND RX/TX FEED

REMARKS

ENGR DBL

DATE 05 JUN 92

4.20GHz F-PHASE 19° R ± 180° CO-POW

EXHIBIT C

POWER FLUX DENSITY AND EIRP DENSITY – COMPARISON OF ONSAT 3.7 METER AND 4.5 METER ANTENNAS

Item	4.5 meter	3.7 meter
Maximum Gain (60% efficiency) @ 6 GHz- dB	46.8	45.1
Allowed power density into 4.5 meter (25.212 d)- dBW/4kHz	-2.7	
Allowed EIRP density out of 4.5 meter (note 1)- dBW/4kHz	44.1	
Maximum EIRP (Onsat 3.7 meter)- dBW		44.0
Maximum EIRP density out of 3.7 meter (note 2) – dBW/4kHz		27.5
Maximum power density into 3.7 meter (note 1) – dBW/4kHz		-17.6
Gain of 4.5 meter @ +/- 1 degree from max. (note 3) – dB	29	
Gain of 3.7 meter @ +/- 1 degree from max. (from pattern) – dB		31
Allowed EIRP density 4.5 meter @ +/- 1 degree – dBW/4kHz	26.3	
EIRP density 3.7 meter @ +/- 1 degree – dBW/4kHz		13.4

Notes:

1. EIRP density = Power Density into antenna + Antenna Gain
2. EIRP density = EIRP + $10 \log 4/180 = 44.0 - 16.5 = 27.5$
3. From 25.209: $29 - 25 \log 1 = 29 - 0 = 29$ dB

The EIRP density per 4 kHz from the Onsat 3.7 meter antenna is 12.9 dB (19 times) less than that which is allowed from a compliant 4.5 meter antenna at 1 degree from maximum gain.